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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,347	07/14/2003	F. Paul Silverman	VAL6131P0591US	6353

7590 10/12/2005

WOOD, PHILLIPS, KATZ, CLARK & MORTIMER  
Citicorp Center, Suite 3800  
500 West Madison Street  
Chicago, IL 60661-2511

EXAMINER

CLARDY, S

ART UNIT PAPER NUMBER

1617

DATE MAILED: 10/12/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/619,347	<b>Applicant(s)</b> SILVERMAN ET AL.	
	<b>Examiner</b> S. Mark Clardy	<b>Art Unit</b> 1617	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 29 July 2005.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 2,3,7-16 and 19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed..
- 6) ☒ Claim(s) 2,3,7-16 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All    b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)                        | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

Art Unit: 1617

Claims 2, 3, 7-16, and 19 are pending in this application which claims benefit of US Provisional Application 60/433,830, filed December 16, 2002.

Applicants' claims are now drawn to methods of enhancing the herbicidal activity of photosystem II (PSII) inhibiting herbicides<sup>1</sup> by adding 2 to 22 moles of a salicylate (SA) or other Systemic Acquired Resistance (SAR) inducer<sup>2</sup> per mole of PSII herbicide (claim 19).

Claim 8 is objected to under 37 CFR 1.75 as being a substantial duplicate of claim 7; both claims are drawn to the method wherein the salicylate is sodium salicylate. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 9-11 and 19 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 9, dependent from claim 7 (wherein the salicylate is sodium salicylate), claims "wherein the salicylate is salicylic acid or a salicylate derivative". It appears that it should depend directly from claim 19.

Claim 10 is dependent from "claim 1 19".

In claim 11, the term "hydroxypyridinecarboxylic" is misspelled.

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<sup>1</sup> Claims 2, 3: atrazine, bentazon

<sup>2</sup> Claims 10-16: hydroxypicolinic acid, acibenzolar (=BTH), dichloroisonicotinic acid, (di)chlorosalicylic acid compounds

Art Unit: 1617

In claim 19, "PSII" is incorrectly written as "PS11".

The rejection under 35 USC 102 is withdrawn in response to applicants' amendment because the compositions are no longer claimed. The Klepper reference does not explicitly disclose the herbicidal application of the combination of the disclosed ingredients to live plants; it is an in vitro investigation into NO<sub>x</sub> emissions from cut soybean leaves. Whole, intact plants were neither exposed to, nor killed by, herbicide application in the experiments.

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 3, 7-16, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over the combined teachings of Klepper<sup>3</sup> and Ryals et al<sup>4</sup>.

Klepper, again, teaches the combination of SA with PSII inhibiting herbicides, i.e., atrazine, bentazon, cyanazine, diuron, metribuzin, norea, phenmedipham, and prometryn (p. 175) in aqueous solution, with the test concentration of the PSII herbicide at 300 ppm or 0.03% (p. 174, "Materials", 2<sup>nd</sup> para). One of the stated goals was to determine whether SA could act as a synergist (p. 174, 2<sup>nd</sup> col, lines 1-5). Klepper concludes that while SA does act as a synergist (p. 178), other salicylates may be more persistent and therefore more practical or effective (p. 179). As stated above, Klepper does not explicitly teach application of these combinations to plants as a method of enhancing herbicidal activity. It does, however, clearly suggest the herbicidal

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<sup>3</sup> Klepper. "Synergistic Levels of Nox Emissions from Soybean Leaves Caused by a Combination of Salicylic Acid and Photosynthetic Inhibitor Herbicides". *Pesticide Biochemistry and Physiology*. 32:173-179. 1988.

<sup>4</sup> Ryals et al. "Systemic Acquired Resistance". *The Plant Cell*. 8:1809-1819. October 1996.

Art Unit: 1617

method in the paragraph bridging pages 173-174, wherein the accumulation of NO<sub>x</sub> is discussed as the mechanism of action for the PI (i.e., PSII) herbicides: "NO<sub>x</sub> evolution is closely related to intact leaf nitrite content. Free nitrite, nitrous acid, and free radical NO<sub>x</sub> gases are highly toxic to basic plant metabolic systems." (footnotes omitted). Thus, while not testing the combinations on intact, live plants, Klepper clearly suggests that the application of SA will synergistically enhance the activity of PSII herbicides. Klepper does not appear to address the SAR activating characteristic of SA.

Ryals et al, again, teach that SA, acibenzolar (BTH), and other compounds are known activators of SAR. One of ordinary skill in the art of plant growth regulating compounds would be motivated to substitute the SA of Klepper with a compound such as acibenzolar because Ryals et al teach their equivalent activity in plants as SAR activators.

Thus, again, it would have been *prima facie* obvious to one of ordinary skill in the art at the time the invention was made to have combined SA or other SAR inducers such as acibenzolar, with PSII inhibiting herbicides such as atrazine or bentazon, because Klepper suggests the enhanced herbicidal utility of such compositions, and because SA and acibenzolar are both known signaling molecules which are useful for stimulating SAR in plants. The teachings of the prior art would suggest to the ordinary artisan that the biochemical signaling characteristics of SA and acibenzolar are interchangeable.

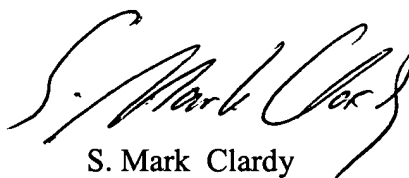
No unobvious or unexpected results are noted; no claim is allowed.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to S. Mark Clardy whose telephone number is 571-272-0611. The examiner can normally be reached on 7:30-5:00.

Art Unit: 1617

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sreenivasan Padmanabhan can be reached on 571-272-0629. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read "S. Mark Clardy", is positioned above the printed name.

S. Mark Clardy  
Primary Examiner  
Art Unit 1617

October 3, 2005